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Effect of particle size on the biodistribution of lipid nanocapsules: comparison between nuclear and fluorescence imaging and counting.

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Titre	Effect of particle size on the biodistribution of lipid nanocapsules: comparison between nuclear and fluorescence imaging and counting.
Type de publication	Article de revue
Auteur	Hirsjärvi, Samuli [1], Sancey, Lucie [2], Dufort, Sandrine [3], Belloche, Camille [4], Vanpouille-Box, Claire [5], Garcion, Emmanuel [6], Coll, Jean-Luc [7], Hindré, François [8], Benoît, Jean-Pierre [9]
Editeur	Elsevier
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Résumé en anglais	In vivo biodistribution of nanoparticles depends on several physicochemical parameters such as size. After intravenous injection of 25, 50 and 100 nm lipid nanocapsules (LNC) in nude mice bearing HEK293(β3) tumour xenografts, biodistribution was evaluated by γ-scintigraphy and by γ-counting. The small LNC 25 nm disappeared faster than the larger LNC 50 and 100 nm from the blood circulation due to faster elimination and wider tissue distribution. At 24h, biodistribution profiles of all these LNC were similar. Low LNC quantities were found in this weak EPR (enhanced permeability and retention) tumour regardless the particle size. Co-injected 50 nm fluorescent DiD-LNC and (99m)Tc-LNC allowed direct comparison of biodistribution as evaluated by the two methods. Optical imaging underestimated LNC quantity especially in dark-colored organs that were observed to capture extensive quantities of the particles by γ-counting (i.e. liver, spleen, and kidney).
URL de la notice	http://okina.univ-angers.fr/publications/ua6666 [24]
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